

Interactive comment on “Groundwater level changes on Jeju Island associated with the Kumamoto and Gyeongju earthquakes” by Soo-Hyoung Lee et al.

Anonymous Referee #2

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The manuscript presents observation data of groundwater level changes by the Kumamoto and Gyeongju earthquakes. And authors proposed that the differences in groundwater level change are mainly due to the fault structures of MTL and Yangsan fault, respectively, presented in Figure 1. - This interpretation sounds perceptible, but needs more data to support the argument.

(P.5, line 1~2) Authors stated that "higher hydraulic conductivity estimates yielded higher groundwater level changes". - Higher hydraulic conductivities of aquifer matrix mean higher potentials of seismic energy to be reduced by groundwater along its pass ways. Then, how can the higher K cause higher water-level changes?

Miscellaneous: - In Table 2, data need proper units. - In addition, in the groundwater

level monitoring, the sensitivity should be given here to support less than 1 cm of change being significant.

[Conclusion] Groundwater level change is affected by numerous factors including tectonic settings, local geology of monitoring sites, monitoring well design and hydrogeologic properties of monitoring intervals. Thus, to make the argument of structural difference as the main cause of the difference of water-level changes, this manuscript should present some quantitative evidences. Otherwise, it could be just an observation report.

[Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2017-28, 2017.](#)

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